UNITED STATES PATENT AND TRADEMARK OFFICE

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10/016,233	11/01/2001	James June-Ming Wang	TIA-003	2981

36822 7590 11/30/2005		EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   *Claims 1-13* are rejected under 35 U.S.C. 103(a) as being unpatentable over

Timothy et al. (U.S. Patent Number 6,433,736 B1) in view of Basuthakur et al. ((U.S.

Patent Number 5,452,869).

Regarding *claim 1*, Timothy et al. discloses in column 1 lines 40-41, of an antenna

tracking system for an antenna mounted on an unstable platform, which reads on

claimed "tracking system for a vehicle mounted satellite antenna", the said tracking

system comprising:

- an Attitude Heading Reference System (AHRS, 24), (where the "attitude"

  expressly represents the trio - Pitch/Roll/Heading), that is mechanically

  connected to the directional antenna. Internally the said AHRS (24)

  compensates for the pitch, roll, and heading, which reads on claimed "yaw".

  Since the functionality of the Applicant's sensors are to detect an occurrence, the

  functions are analogous to that of the function of the said AHRS (24), in that,

  Timothy et al discloses a mechanism that collectively couples the three individual

  sensors into one functional unit.

- an Antenna Pointing Computer (APC, 25), which reads on claimed "first and second bias correction mean", coupled to the said AHRS (24) that provides sensed data or sampled data (pitch/roll/heading information) through a fast-control loop, see column 4 lines 23-27, said APC (25) including one of

    - Timothy et al teaches in column 4 lines 27-56, where the said sampled data is used by the said APC (25) to calculate the pitch, roll, and heading biases applied to the said AHRS (24). The Examiner concludes that the function of the Applicant's cited first and second bias correction means parallels in comparison to functions of the said APC (25) disclosed by Timothy et al. The resultant of both the Applicant and Timothy's et al correcting means are synonymous and therefore render no apparent differences, regarding functionality, which reads on claimed "first bias correction means for correcting yaw sensor bias where roll sensor bias has been calibrated to zero, and second bias correction means for correcting yaw sensor bias where pitch sensor bias has been calibrated to zero."

However, to more clearly support the Examiner's position, Basuthakur et al. details in column 7 lines 42-45, wherein the yaw bias calibration is performed with the respected roll/pitch are at zero.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Timothy et al. (U.S. Patent Number 6,433,736 B1) to include Basuthakur et al. (U.S. Patent Number 5,452,869) in order to provide the

calibration the requirements to set the roll/pitch values to zero for the calibration of the yaw bias.

Regarding **claims 2 and 5**, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the combination according to **claim 1**, Timothy et al. continues to disclose a system wherein:

- said Antenna Pointing Computer (APC, 25), which reads on claimed "first and second bias correction means", includes means for calculating {.DELTA.Az+.DELTA.El tan(Az) tan(El)} where .DELTA.Az and .DELTA.El are antenna pointing commands, which reads on claimed "correction rates", Az is the azimuth of the antenna, and El is the elevation of the antenna. See column 4 lines 62-67.

Regarding **claims 3 and 6**, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the combination according to **claims 1 and 5**, Timothy et al. continues to disclose in column 4 lines 23-29, lines 62-65, a system wherein:

- said Antenna Pointing Computer (APC, 25) utilizes the information from the said AHRS (24) to calculate the pitch bias, which reads on claimed "includes pitch sensor bias correction means for calculating pitch sensor bias."

Regarding *claims 4 and 7*, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the combination according to *claims 3 and 6*, Timothy et al. continues to disclose in a system wherein:

- said AHRS (24)'s sensed pitch bias, which is calculated by the said APC (25), which reads on claimed "pitch sensor bias correction means", includes means for calculating {.DELTA.EI sec(Az)}. See column 4 lines 24-65.

Regarding *claim 8*, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the combination according to *claim 1*, Timothy et al. continues to disclose in a system comprising:

- e) the said APC (25), which reads on claimed "azimuth angle correction means", coupled to said AHRS (24), which reads on claimed "yaw sensor, said pitch sensor, and said roll sensor", for computing pointing angles which are for the Azimuth (Az) based on the said AHRS (24) data, which reads on claimed "corrected azimuth angle for said antenna based on input from said sensors". See column 4 lines 64-65.

Regarding *claims 9 and 12*, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the

combination according to **claims 8 and 11**, Timothy et al. continues to disclose a

system wherein:

- said APC (25), which reads on claimed "azimuth angle correction means"

  includes means for calculating {Az-(.phi..sub.x cos(Az)tan(El)+.phi..sub.y

  sin(Az)tan(El)+.phi..sub.z).DELTA.t} where Az is the azimuth of the antenna, El is

  the elevation of the antenna, R (roll), P (pitch), H (heading), which reads on

  claimed ".phi..sub.x, .phi..sub.y, .phi..sub.z", are derived from the AHRS (24)

  data, which reads on claimed "roll, pitch, yaw sensor outputs", respectively, and

  .DELTA.t is a time interval. See column 5 lines 20-47.

Regarding **claims 10 and 13**, as the combination of Timothy et al. (U.S. Patent Number

6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the

combination according to **claims 9 and 12**, Timothy et al. continues to disclose a

system wherein:

- the said R, P, H, which reads on claimed ".phi..sub.x, .phi..sub.y, .phi..sub.z", are

  the AHRS (24) data, which reads on claimed "respective roll, pitch, yaw sensor

  outputs", less the estimated bias for each sensor output. See column 5 lines 1-

  14.

Regarding **claim 11**, as the combination of Timothy et al. (U.S. Patent Number

6,433,736 B1) and Basuthakur et al. (U.S. Patent Number 5,452,869) are made, the

combination according to *claim 8*, Timothy et al. continues to disclose in a system
comprising:

- f) the said APC (25), which reads on claimed "azimuth angle correction means",
  coupled to said AHRS (24), which reads on claimed "yaw sensor, said pitch
  sensor, and said roll sensor", for computing pointing angles which are for the
  Azimuth (Az) based on the said AHRS (24) data, which reads on claimed
  "corrected azimuth angle for said antenna based on input from said sensors".
  See column 4 lines 64-65.

2.   *Claims 14-16* are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination Timothy et al. (U.S. Patent Number 6,433,736 B1) in view of Perry et

al. (U.S. Patent Number 5,119,501) and in further view of Jan et al (U.S. Patent Number

5,739,784).

Regarding *claim 14*, Timothy et al. discloses an antenna tracking system for an

antenna mounted on an unstable platform.

However, Timothy et al. fails to clearly disclose wherein a received signal

strength indicator is coupled to the signal output of the said antenna

Perry et al. teaches in column 3 lines 47-60 and FIGURES 3 and 4, where a

RSSI, which reads on claimed "received signal strength indicator", is coupled to the

signal output of a sector antennas (6, 8), which reads on claimed "satellite antenna".

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Timothy et al. (U.S. Patent Number 6,433,736 B1) to include Perry et al. (U.S. Patent Number 5,119,501) in order to provide a means to detect the incoming signal parsed from the transmitting medium so that the said system will have the capability to adjust accordingly.

However, the combination of both Timothy et al. (U.S. Patent Number 6,433,736 B1) and Perry et al. (U.S. Patent Number 5,119,501) fail to continue to clearly point out the requirement that an adjustable phase shifter is coupled to said RSSI.

Jan et al asserts in column 6 lines 50-55 and column 7 lines 15-13, of a phase shift matrix, which reads on claimed "adjustable phase shifter".

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify the combined teachings of Timothy et al. (U.S. Patent Number 6,433,736 B1) and Perry et al. (U.S. Patent Number 5,119,501) to further include Jan et al (U.S. Patent Number 5,739,784) in order to provide a said phase shift matrix which automatically adjusts the phase of the signal output of the said antenna in response to said RSSI in order to obtain maximum received signal strength.

Regarding *claim 15*, as the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1), Perry et al. (U.S. Patent Number 5,119,501) and Jan et al (U.S. Patent Number 5,739,784) are made, the combination according to *claim 14*, Jan et al. teaches in column 5 lines 60-67, of a beam-former (50), which reads on claimed "beam

forming network", coupled to said antenna (see column 5 lines 8-12) and to said phase

shift matrix.

Regarding *claim 16*, as the combination of Timothy et al. (U.S. Patent Number

6,433,736 B1), Perry et al. (U.S. Patent Number 5,119,501) and Jan et al (U.S. Patent

Number 5,739,784) are made, the combination according to *claim 15*, wherein:

- Jan et al. teaches, in column 5 lines 60-67 and column 6 lines 1-5, of the said

  beam-former (50) includes a Divider/Combiner (57), which reads on claimed

  "means for splitting the signal output into two signals", having a relative phase

  difference, and

- said phase shift matrix includes means for adjusting the relative phase difference

  of the two signals. See column 5 lines 45-55.

3.   *Claims 17-19* are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1), Perry et al. (U.S.

Patent Number 5,119,501) and Jan et al (U.S. Patent Number 5,739,784) in view of

Dedieu et al. (U.S. Patent Publication Number 2002/0051091 A1).

Regarding *claim 17*, the combination of Timothy et al. (U.S. Patent Number 6,433,736

B1), Perry et al. (U.S. Patent Number 5,119,501) and Jan et al (U.S. Patent Number

5,739,784) clearly discloses an antenna system, which reads on claimed "satellite

antenna system", comprising:

- satellite antenna, as disclosed by Timothy et al. in column 4 lines 64-67, having a

  signal output;

- a said phase shift matrix, which automatically adjusts the coupled phase of the

  signal output. See Jan et al column 6 lines 50-55 and column 7 lines 15-13;

However, the combination of Timothy et al. (U.S. Patent Number 6,433,736 B1),

Perry et al. (U.S. Patent Number 5,119,501) and Jan et al (U.S. Patent Number

5,739,784) fails to disclose channel selection detection means coupled to said

adjustable phase shifter and having means for coupling to the data port of a set-top box.

Dedieu et al. discloses in paragraph [0033] of a TZIF or tuner, which reads on

claimed "channel selection detection means" that has a means for coupling to the data

port of a set-top box, the said TZIF or tuner includes a means for determining a selected

satellite channel from the data port of the set-top box and means for adjusting phase

shifter based on the selected channel. See paragraph [0035].

Therefore, at the time of the invention it would have been obvious to a person of

ordinary skilled in the art to modify the combined teachings of Timothy et al. (U.S.

Patent Number 6,433,736 B1), Perry et al. (U.S. Patent Number 5,119,501) and Jan et

al (U.S. Patent Number 5,739,784) to further include Dedieu et al. (U.S. Patent

Publication Number 2002/0051091 A1) in order to provide a said receiving unit, the said

tuner, to realize the signal received from the said satellite. In addition, the said tuner

having the functionality to send commands to the said phase shifter in order to adjust

the phase according to the selected channels.

Regarding *claim 18*, as the combination of Timothy et al. (U.S. Patent Number

6,433,736 B1), Perry et al. (U.S. Patent Number 5,119,501), Jan et al (U.S. Patent

Number 5,739,784) and Dedieu et al. (U.S. Patent Publication Number 2002/0051091

A1) are made, the combination according to *claim 17*, Jan et al. teaches in column 5

lines 60-67, of a beam-former (50), which reads on claimed "beam forming network",

coupled to said antenna (see column 5 lines 8-12) and to said phase shift matrix.

Regarding *claim 19*, as the combination of Timothy et al. (U.S. Patent Number

6,433,736 B1), Perry et al. (U.S. Patent Number 5,119,501), Jan et al (U.S. Patent

Number 5,739,784) and Dedieu et al. (U.S. Patent Publication Number 2002/0051091

A1) are made, the combination according to *claim 18*, wherein:

- Jan et al. teaches, in column 5 lines 60-67 and column 6 lines 1-5, of the said

  beam-former (50) includes a Divider/Combiner (57), which reads on claimed

"means for splitting the signal output into two signals", having a relative phase

difference, and

- said phase shift matrix includes means for adjusting the relative phase difference
  of the two signals. See column 5 lines 45-55.

Response to Arguments

Applicant's arguments filed 6/16/2005 have been fully considered but they are

not persuasive.

Regarding *claims 1-19*, although the reference of Timothy et al. fails to clearly

disclose the yaw bias' functional calibration techniques as cited by the Applicant, the

Examiner would like to bring to the Applicant's attention to the cited reference

Basuthakur et al. which indeed clearly disclose the step of calibrating the respected

roll/pitch to zero for the calibration of yaw bias. The Applicant, at various instances,

argues the premise that the Examiner's cited prior art fails to disclose the actual

trigonometric function as disclosed in the Applicant's claims. The Examiner maintains

that although Timothy does not clearly disclose of the actual trigonometric function as

disclosed by the Applicant, the process by which the claimed calibrations are made are

indeed performed by Timothy synonymously as the Applicant's claimed invention.

As for *claim 14*, the Examiner merely cites Timothy et al. to define the

"environment" of which the Applicant claims. The step/processes involved within the

cited environment is "not" clearly disclosed. Therefore, the Examiner respectfully

incorporates Perry et al. to further include Jan et al. to emphasize the fact that it would

have been obvious to one of ordinary skill in the art to incorporate the steps/processes

of Perry et al. and Jan et al. in order to facilitate the desired outcome of the Applicant's

invention.

Therefore, based on the above comments and the above Office Action, claims 1-

19 stand rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Randy Peaches whose telephone number is (571) 272-

7914. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax

phone number for the organization where this application or proceeding is assigned is

571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Randy Peaches
November 17, 2005

CHARLES APPIAH
PRIMARY EXAMINER